SUPREME COURT, U. S.

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1968.

No. 993

UNIVERSITY OF ILLINOIS FOUNDATION,
Petitioner,

vs.

WINEGARD COMPANY,
Respondent.

RESPONDENT'S REPLY TO PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE EIGHTH CIRCUIT AND PETITIONER'S REQUEST FOR DELAYED CONSIDERATION.

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OPPOSITION TO REQUEST FOR DELAYED CONSIDERATION OF PETITION.

Petitioner has requested that consideration of its petition be delayed until the Court of Appeals for the Seventh Circuit has rendered a decision in a case now before it (PB 1, 11).*

The parties and much of the subject matter of the Seventh Circuit case are distinct and not related to the *Winegard* case. The record developed in the case tried in the Seventh Circuit (PB 11), now on appeal to the Court

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* Note: Each reference designated "PB" herein refers to Petitioner's Brief and the page number therein.

of Appeals for the Seventh Circuit (PB 1), of course, is substantially different from the record developed in the *Winegard* litigation. It also should be noted that the Court of Appeals for the Eighth Circuit specifically alluded to Judge Hoffman's decision.[1]

Petitioner, in support of its request for delayed consideration, also notes that "there are several instances of probable infringement in circuits other than the Seventh or Eighth in which validity of the Isbell patent *may be* litigated." This appears as a plea to delay consideration until such time as another Court of Appeals renders a conflicting decision thereby enhancing the probability of securing the attention of this Court. The plea is not responsive to any stated right of Petitioner or of the need for reasonably expeditious resolution of this conflict. We respectfully submit that Respondent should not be subject to an indefinite delay in the final resolution of its case by reason of the incident of other litigation now pending which may or may not state a different conclusion regarding validity of a patent involved in both suits.

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1. "Plaintiff urges that the trial court erred in denying patent validity and calls our attention to a subsequent decision in a federal district court in Illinois which upholds the validity of the same patent against another defendant, *University of Illinois Foundation* v. *Blonder-Tongue Laboratories, Inc.*, N. D. Ill., Civ. No. 66 C 567. However, as recognized by the district court in Illinois, we must determine this case on its own record" (PB 2A).

REPLY TO PETITION FOR WRIT OF CERTIORARI.

We submit that the questions set forth in Petitioner's brief (PB 2-3) avoids expression of the significant issue in this case. Accordingly, we present our statement of the question before this Court.

QUESTION PRESENTED.

Whether the district court and the Court of Appeals for the Eighth Circuit properly applied the nonobvious test of 35 U. S. C. § 103 in determining that the patent in suit did not involve patentable subject matter.

STATEMENT OF CASE.[2]

This action was instituted by Petitioner when it filed a complaint in the United States District Court for the Southern District of Iowa alleging infringement of Letters Patent 3,210,767. Petitioner is the owner by assignment of said patent.

The decision of the District Court is set forth in the appendix attached to the petition (PB 10A-23A). The District Court stated that ". . . it can be seen that an antenna with the general parameters of Isbell patent[3] will result from a combination of the dipole array of Katzin[4] with the transposed feeder line of the Channel Master

2. Petitioner's statement of the case is primarily argumentative and not a concise statement of the facts material to the consideration of the question presented.

3. U. S. Patent 3,210,767.

4. U. S. Patent 2,192,532.

"K. O."[5] or the Koomans[6] or Winegard[7] patents." The District Court concluded that ". . . upon full consideration of the record herein (the Court), finds that the disclosure of Isbell Patent No. 3,210,767 is lacking in the prerequisite nonobviousness and is, therefore, invalid" (PB 22A-23A).

The Court of Appeals for the Eighth Circuit affirmed the decision of the District Court (PB 1A-9A) and stated:

> "We have examined the record and find that all claims (of the Isbell patent) must be denied, lacking nonobviousness as a matter of law for essentially the same reasons set forth by the court below." (PB 2A—parenthetical expression added.)

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5. One of the antennas cited as prior art, produced and marketed by the Channel Master Corporation of Ellenville, N. Y. between September 1954 and December 1958 (PB 16A).

6. U. S. Patent 1,964,189.

7. U. S. Patent 2,700,105.

ARGUMENT.

THE STANDARD TO DETERMINE WHETHER SUBJECT MATTER IS PATENTABLE IS SET FORTH IN 35 U. S. C. SECTIONS 101 AND 103, WITH SECTION 103 REQUIRING NON-OBVIOUS SUBJECT MATTER.

Patents are granted only for developments which are new, useful and non-obvious to one having ordinary skill in the art. The patent laws do not require that there be "invention" but rather that there be statutory unobviousness.

Hard work in studying the discoveries and acquiring the ideas of others, the exercise of good judgment in selecting them and skill in applying them to practical results do not involve the creation of patentable subject matter. All such activity must be measured against the state of the art and, of course, must satisfy the standard of patentability.

The content of the prior art must be determined by the mandates of this Court as set forth in *Graham* v. *John Deere Co.*, 383 U. S. 1, 17 (1966). There is was stated:

> * * * the § 103 condition, which is but one of three conditions, each of which must be satisfied, lends itself to several basic factual inquiries. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.* * *

The standard by which the District Court and the Court of Appeals for the Eighth Circuit determined that the Isbell development did not involve patentable subject

matter is the standard expressed by this Court in *Graham, supra.* Both courts examined the prior art to determine the scope and content thereof; both courts evaluated the differences between the Isbell development and the prior art examined and both courts, in light of this examination, determined that the Isbell antenna did not involve nonobvious subject matter.

Petitioner concedes that such an examination and determination was made but contends that both courts erred in the basic determination and failed to properly consider the significance of other secondary aspects (PB 7).

PETITIONER'S CONTENTION THAT THE COURT OF APPEALS APPLIED THE WRONG STANDARD OF PATENTABILITY IS NOT CORRECT.

Petitioner contends that the Court of Appeals applied the wrong standard of patentability (PB 6), further stating that the standard applied was contrary to that expressed by this Court in *Graham* v. *John Deere, supra.* This contention is predicated upon an alleged "unpredictability" with respect to the subject matter of the Isbell patent. We submit that the "unpredictability" attributed to the Isbell development is not supported by the record in the present controversy. In any event, we submit that Petitioner primarily seeks to obscure the real issue, namely, whether the Isbell antenna was obvious within the meaning of 35 U. S. C. 103.

The courts below applied the proper standard of patentability. The Court of Appeals for the Eighth Circuit, for example, in addressing itself to the statutory standard of patentability to be applied, pointed out with particularity that, as Mr. Justice Clark stated in *Graham* v. *John Deere, supra,* the test of nonobviousness is one of inquiry, not quality, and further set forth that such inquiry involves:

> "(1) scope and content of the prior art, (2) differences between the subject patent and the prior art, (3) the level of the skill in the art at the time involved and (4) secondary considerations relating to commercial success, long felt want, et al." (PB 4A.)

Even the most casual comparison confirms that the standard applied by the Court of Appeals is in complete harmony with that set forth in *Graham*.

Petitioner's real objection resides in the fact that the courts below refused to consider the factor of "unpredictability" as the test of patentable subject matter but adhered to the statutory standard expressed in 35 U. S. C. 103. However, it cannot be said that the Court of Appeals did not consider the factor of alleged "unpredictability" in relation to the Isbell subject matter, as Petitioner suggests. The Court was well aware of secondary considerations on the question of patentability and pointed out that "predictability" is not the test of patentability under section 103 and merely obscures the true issue of nonobviousness (PB 4A).

Many "secondary" tests have been referred to over the years. The Court of Appeals specifically referred to "commercial success, long-felt need, et al." (PB 4A). Besides "unpredictability", the "et al." includes such factors as: delay or failure of others to produce the subject matter; improved economy, efficiency or simplicity; tribute of competitor's imitation; extensive royalty agreements by competitors; supplanting of older, prior art structures; elimination of a technological block; prior unsuccessful efforts or experiments; citation of many prior art patents to anticipate disclosed subject matter. The foregoing list is not exhaustive but is intended to be representative of factors frequently considered by the Courts. In each case, the particular factor cannot in and of itself establish patentability where none exists. We consider it equally well

established that such secondary considerations are applicable only where there is serious doubt as to whether certain subject matter is patentable. Accordingly, we submit that if an alleged factor of "unpredictability" is to be considered in a particular case, it necessarily must be of a secondary nature, rather than primary, and cannot, of itself, establish patentability.

Petitioner's Reasons and Arguments.

The Petitioner sets forth two grounds in alleging that the Court of Appeals erred in its decision. It is stated separately that "Unpredictability of Result Cannot Be Ignored in Determining Non-Obviousness" (PB 7) and "One Skilled in the Art Would Have Been Deterred From Making Isbell's Combination." (PB 10.)

It is significant to note that the argument under these headings is the same as that made to the Court of Appeals in the Petition for Rehearing to that Court. There is a slight modification of one (first) paragraph on page 8 of Petitioner's brief, as well as a relocation thereof, and the addition of one (last) paragraph on page 9. Petitioner's brief in support of its request for rehearing is set forth in the appendix attached (2A-5A). The Petition for Rehearing was denied and Petitioner now presents the same arguments to this Court.

The Alleged Factor of Unpredictability.

Petitioner states that "predictability" is a major factor to be considered in resolving the issue of obviousness and includes cases cited in support of this position (PB 7). We are unable to find such support in the cases cited. Petitioner relies upon *Application of Pantzer,* 341 F. 2d 121 (1965), for the proposition that to hold an invention ob-

vious one skilled in the art must anticipate success with "a high degree of probability." (PB 7.) Such language does appear in that case. The language, however, is taken out of context and standing by itself does not express the position of that Court. The three sentences immediately preceding the language cited by Petitioner provide a more definitive perspective with respect to the *Pantzer* decision, namely (126):

> "* * * The Appellant's position appears to be that we must be able to predict with certainty that those glycols will dissolve with methetharimide before rejection is proper here.
>
> However, as we pointed out in *In re Moreton*, 48 CCPA 928, 288 F. 2d 940, *obviousness does not require absolute predictability.* Where, as here, the knowledge of the prior art clearly suggests that the use of glycols as solvents in place of water to form solutions of methetharimide stable against hydrolysis would be successful, *the mere possibility of failure does not render their successful use unobvious.*" (Emphasis added.)

The rule that obviousness does not require absolute predictability is well founded in the law. *In re Moreton* (1961), referred to by the Court in *Pantzer,* has repeatedly been relied upon in subsequent cases before the Court of Customs and Patent Appeals as well as by other Courts.[8] As such, it may be considered a significant decision on this question.

The *Moreton* case closely parallels the case at hand, with the exception that it deals with subject matter which is related to the chemical field rather than the electrical field.

8. See: *Application of Huellmantel,* 324 F. 2d 998 (1963); *Application of Pantzer and Feier, supra; Application of Graf,* 343 F. 2d 774 (1965); *Application of Crounse,* 363 F. 2d 881 (1966); *Application of Wilson,* 368 F. 2d 269 (1966); *Application of Miegel and Verbanc,* ..... F. 2d ....., 159 USPQ 716 (1968); *Clinical Products, Ltd.* v. *Brenner, Comr. of Pats.,* 255 F. Supp. 131 (D. C., DC, 1966); *Clinical Products, Ltd.* v. *Brenner, Comr. of Pats.,* 255 F. Supp. 151 (D. C., DC, 1966).

The application in the *Moreton* case concerned a hydraulic fluid suitable for use, for example, in aircraft systems over a wide temperature range (—80°F. to 400°F.). The Court with respect to the statutory standard of obviousness stated at 288 F. 2d 940, 942:

> "We feel constrained to hold that the prior art possessed quite full knowledge of the use of appellant's orthosilicate component as hydraulic fluid and of its viscosity-temperature behavior. This brings the question of patentability of the claimed invention down to the obviousness of adding * * *"

The applicant (appellant) in *Moreton* sought to avoid the consequences of the prior art by raising the issue of "unpredictability". In this regard, the court pointed out (943):

> "Appellant bases considerable argument on a reference no longer relied upon by the Patent Office * * *. It is said to show that the addition of viscosity improving agents to lubricants does not give predictable results * * *."

With the foregoing as a background, the Court stated (943):

> "What this amounts to is an argument that if one slavishly following the prior art, albeit with a little educated imagination, will sometimes succeed and sometimes fail, then he is always entitled to a patent in case of success. That is not the intention of 35 U. S. C. 103. Obviousness does not require absolute predictability. Where, as here, the knowledge of the art clearly suggests * * *, the mere possibility of failure does not render their successful use 'unobvious'."

It should be observed that in the *Moreton* case, and in the present case, prior art is present that is shown to possess full knowledge of the subject matter in question and in each it is urged that "unpredictability" of results prevent the application thereof to avoid any conclusion of

obviousness. Petitioner here is advocating the very concept denied in *Moreton* and by the Courts below in the present case. Petitioner suggests that notwithstanding the teachings of the prior art, a patent is sustainable for the simple reason that there was a mere possibility of failure in attaining each and every objective. In this sense the term "unpredictability" is not proper. Petitioner appears to be advocating "infallibility" or "prevision" as being necessary before an invention may be found obvious. These factors have been considered by the Courts. In *Naamlooze Venootschafs* v. *Coe, Commissioner of Patents,* 132 F. 2d 573, 575 (C. C. A. DC, 1942), it was stated:

> "It is true that anological reasoning is more restricted in chemistry than in the field of mechanics. (citations omitted). This is because chemistry is essentially an experimental science in which predictions cannot be made with the same certainty that they can be made in mechanics. (citations omitted) * * *. But from the facts that *prevision is not certain* in chemistry, that progress in the chemical art is reached largely through experiment, and that patents are often upheld where the inventor stumbles upon a discovery, * * *, *it does not follow that every new and useful result accomplished by experiment is patentable* (citations omitted)." (Emphasis added.)

An illuminating treatment on the question of absolute predictability (or infallibility) is found in *Hedman* v. *Commissioner of Patents,* 253 F. Supp. 515, 520 (D. C., DC 1966). The Court there stated:

> "* * * While utmost care must be exercised by chemical patent examiners and other ordinarily skilled chemists in making predictions based on the general rules of chemistry, on the ground that even the most reasonable predictions in this science often turn out to be wrong, this factor should not preclude 'a person having ordinary skill in the art' of chemistry from making reasonably based predictions on the basis of prior art knowledge.

> With further regard to this alleged lack of predictability, little sophistication is required to distinguish between the undeniably true statement that there is no absolute predictability in chemistry on the one hand, and the erroneous statement that there is absolutely no predictability in chemistry on the other hand. An unequivocal holding to the effect that there is no predictability whatsoever in the science of chemistry would completely eliminate the obviousness test of 35 U. S. C. § 103 from consideration in determining the patentability of claimed chemical inventions. If there is no predictability in chemistry, then no new chemical invention would ever have been obvious at the time it was made to an ordinarily skilled chemist, and it would logically follow that any new and useful chemical invention would be patentable. Such elimination of the obviousness test of 35 U. S. C. § 103 in determining the patentability of chemical inventions would be quite contrary to statute law and to the clear intent of Congress in enacting Section 103 that the test should be applied in determining patentability of every 'invention,' whether chemical, mechanical, or electrical."

Petitioner nonetheless alleges that predictability is a major factor to consider in determining patentability. However, if there is no predictability concerning frequency independent operation for log-periodic antennas, then no new invention would ever have been obvious at the time it was made to an ordinarily skilled antenna designer and it would logically follow that *any* new and useful antenna structure would be patentable. Surely this cannot be the law for, as *Hedman* states, such a holding would completely emasculate the obviousness test under Section 103.

It might be well to offer a brief general comment with respect to the factor of unpredictability. It will be noted from the cases cited that it is a factor closely related to the chemical field. As pointed out in *Naamlooze Venootschafs, supra,* chemistry is essentially an experimental

science in which predictions may not be made with the same certainty as in mechanics. However, we are not persuaded that electrical or electronic subject matter should be considered as analogous to the chemical area rather than the mechanical area. We submit that any subject matter in the electrical arts is more susceptible to mathematical analysis than in the chemical arts, and perhaps even more than in the mechanical arts. To avoid making an issue of this point, we treat the matter as if predictability were a common factor in considering electrical patents. We submit that the same statutory standard of patentability is to be applied, whether the alleged invention is chemical, electrical or mechanical in nature. *Hedman* v. *Commissioner of Patents, supra.*

Consideration of the question of predictability has not been restricted to the Court of Customs and Patents Appeals and the District Court for the District of Columbia. This Court also has passed on the question. In *Mandel Bros., Inc.* v. *Wallace,* 335 U. S. 293 (1948), this Court was faced with the question of whether it constituted patentable invention to combine urea with a solution of aluminous sulphate in a cosmetic astringent preparation. The Courts below held that the use of urea as an anti-corrosive agent was a matter of public knowledge and that it had previously been used as a corrosion inhibitor in compounds other than antiperspirants. Nevertheless, the Respondent there, as the Petitioner here, argued that the prior art was irrelevant, for the teachings, if any, would not have led a chemist skilled in his art to undertake the experiment which resulted in success. What is particularly significant is that it was earnestly urged that urea combined with acid salts brought about a result contrary to what a skilled chemist would have concluded. Ergo, it was a "paradoxical" result, unpredictable by a skilled chemist. This Court addressed itself to this argument and stated at page 295:

> "But we think that the state of the prior art was plainly sufficient to demonstrate to any skilled chemist searching for an anticorrosive agent that he should make the simple experiment that was made here.* * * As the United States Court of Appeals for the Second Circuit pointed out when this patent was before it '* * * skillful experiments in a laboratory, in cases where the principles of the investigations are well known, and the achievement of the desired end requires routine work rather than imagination, do not involve invention'."

THE ISBELL ANTENNA WAS OBVIOUS TO ONE HAVING ORDINARY SKILL IN THE ART AT THE TIME THE ANTENNA WAS MADE.

It should be noted that various statements set forth in the Petition have no foundation in the record. Petitioner contends, for example, that without the purported method for designing frequency independent log-periodic antennas relied upon by the Court below, there is no basis in the art for combining elements to make Isbell's combination (PB 8). We submit that this is inaccurate as well as an unwarranted play on words. Petitioner states that there is no method of designing "frequency independent log-period antennas" because it cannot be shown that one can predict with absolute and unswerving infallibility beforehand that all such fabricated log-periodic antennas will exhibit the desired frequency independence. However, it cannot be contested, and the Courts below so found, that a method of designing log-periodic antennas did and does exist (R 177), (PB 3A), a method which was well known in the art. Accordingly, there was every basis for combining elements to arrive at Isbell's antenna based on the teachings of the prior art. To arrive at a log-periodic antenna one must employ the design principles set forth in the known theory of log-periodic antenna design (R 177) (PB 3A),

deliberately, or at least unwittingly, but applied nevertheless.

To say, as Petitioner contends, that an antenna designer was faced with the problem of selecting blindly the single effective combination of elements from some vast number of possible, but inoperative, combinations is not true. The very most than can be said of Isbell's development is that simple dipoles were substituted in lieu of folded dipoles incorporated in a prior art structure (the Channel Master K. O. antenna, for example. R 197) which embodied the log-periodic design principles (PB 6A, 8A, R 35). The record is clear that simple and folded dipoles are electrically equivalent and have been utilized interchangeably by antenna engineers (*SR 49-51) (SR 131-142) (PB 6A). This hardly is selecting "blindly" from a "vast" number of possible combinations. Nor is this the only means of arriving at Isbell's combination. The trial court specifically pointed out that the Isbell patent will result from a combination of a prior art dipole array (Katzin Patent) and the transposed feeder line (Channel Master K. O. antenna *or* Winegard Patent *or* Koomans Patent) when the lengths and spacings are adjusted by the known log-periodic theory of antenna design (DuHamel & Ore article, R 177) (PB 20A, 21A). This is hardly "selecting blindly" elements and their arrangement in an antenna structure. Even the excerpt from an antenna engineering handbook (R 191) referred to by Petitioner in its brief before the Court of Appeals in support of the position that the design of frequency independent types of log-periodic antennas generally cannot be considered entirely predictable, points out how simply and easily the Isbell structure is derived from the prior art DuHamel structure. We are referring to the excerpt from Jasik's Antenna Engineering Handbook (DX-A-10b, R 191). It is there shown that to obtain the Isbell dipole array, one need only collapse all the angles in the

* SR—Supplemental Record.

DuHamel structure to zero, nothing more (R 191). Again, this is hardly selecting elements or structure arrangement "blindly", without purpose. The record clearly shows that the prior art suggests Isbell's combination. The only thing surprising would be if the combination failed to exhibit the expected result.

Petitioner represents to this Court that others at the University of Illinois

> "* * * tried and failed to achieve the Isbell type of antenna * * *" (PB 9).

Petitioner then refers to pages 103 and 104 of the Record in support of the statement. Pages 103 and 104 of the Record are set forth in the appendix hereto (7A-9A). There is no statement which even suggests the conclusion stated by Petitioner that others tried and failed to achieve the Isbell type of antenna. The representation is totally without support and is an improper conclusion which, we submit, represents nothing more than the ardent wish of Petitioner that the evidence and testimony were thus.

A point that should not be overlooked is that at least one other developed the subject matter disclosed in the Isbell patent at almost the same time as Isbell. The Isbell patent application was involved in an interference with an application filed in behalf of Alec Kravis and Mathew Fredrick Radford, Interference No. 92,150 (SR 113). While Isbell was ultimately successful on the question of priority, one cannot and should not ignore the fact, nor the implications with respect thereto, that others had in fact developed the same subject matter independently at substantially the same time. The case for patent validity is substantially weakened by this circumstance alone since it suggests that the means necessary to solve the particular problem is already in the public domain. *Audio Devices, Inc.* v. *Armour Research Foundation,* 293 F. 2d 102 (2 Cir., 1961);

Graham v. *Jeoffrey Manufacturing Inc.*, 206 F. 2d 769 (5 Cir., 1953).

With the foregoing in mind with respect to the record in the present case, we are unable to understand Petitioner's assertion that one ordinarily skilled in the art would have been deterred from making Isbell's combination. On the contrary, the reverse is true, and the Courts below could do little else but hold as they did. As stated by the trial court:

> "It is thus apparent that the Isbell antenna is a combination of elements, all known in the prior art and also that these known elements were combined in the Isbell antenna in a manner dictated by a theory also known in the prior art." (PB 21A.)

Contrary to Petitioner's assertion (PB 5), the "theory" referred to by the court is identified as "the log-periodic theory of antenna design."

THE COURT OF APPEALS WAS CORRECT IN DISTINGUISHING THE ADAMS CASE.

One last point we feel should be commented upon with respect to Petitioner's reasons for granting the Writ of Certiorari is the reference to the case of *U. S.* v. *Adams*, 383 U. S. 1. Petitioner suggests that the Court of Appeals erroneously distinguished the *Adams* case (PB 10). Also, it is suggested that the Court of Appeals must have concluded that there was no deterrent which faced those in the art who sought to achieve Isbell's result (PB 10). Reference to the Court of Appeals' decision will show that the Court stated that "there was not involved the same deterrent" in the present case as in *Adams* (PB 6A). It will be noted that Petitioner has changed "the same deterrent" to *no* deterrent. Be that as it may, one needs but a cursory examination of the *Adams* case to confirm that the Court of Appeals is correct in that the same deterrent is not present here.

The patent in suit in the *Adams* case disclosed a non-rechargeable, water-activated battery having magnesium and cupurous chloride as the respective electrodes. As such, it more properly pertains to subject matter in the chemical art than in the electrical art, notwithstanding the device is a battery. This Court observed that it was the *first* practical, water-activated, constant potential battery. It exhibited operating characteristics which were entirely *unexpected* and surpassed *all* then-existing wet batteries. It is to the state of the prior art, however, which helps spotlight the non-obviousness of the Adams battery. The Court pointed out that despite a century and a half of advancement with respect to batteries prior to the Adams patent applications, the Patent Office could not find *one* reference to cite against the invention. In addition, experts had expressed disbelief in the invention. Prior art batteries from which the Adams battery was claimed to have been copied were long before discarded. Furthermore, one particular prior art reference (foreign patent) relied upon not only disclosed inoperative subject matter, but was in fact highly dangerous. An attempt to construct a battery according to its teachings first produced a fire, then an explosion when the battery was being assembled.

The Adams patent involved the interchanging of chemicals, which were non-equivalents, notwithstanding the teachings, or more correctly the absence of teaching, of the prior art to achieve the surprising "water battery," while Isbell merely incorporated (or substituted) known elements operating within known principles to achieve a desired result, which result, we might add, was to be expected. Frequency independent log-periodic antennas were shown to be well established in the prior art. Isbell was hardly faced with the same deterrent as Adams, as the Court of Appeals pointed out (PB 7A). To reach the same conclusion with respect to the Isbell combination as Petitioner advocates,

one would necessarily be required to start with a clean sheet and disregard entirely the prior art. However, this type of posture was specifically criticized by this Court in *Mandel* v. *Wallace, supra.*

CONFLICT IN DECISIONS BETWEEN COURT OF APPEALS AND DISTRICT COURT SHOULD NOT BE SUFFICIENT GROUNDS FOR GRANTING CERTIORARI.

Petitioner notes that there is a conflict between the Court of Appeals decision in the present case and a decision by the District Court for the Northern District of Illinois with respect to the validity of the Isbell patent. While not stated in precise words, we infer that Petitioner contends that this is sufficient grounds for this Court to grant the requested writ of certiorari. We respectfully submit that to do so for this reason would clearly be contrary to the established precedent.

Moreover, as previously pointed out, there are significant differences in the record before this Court and the record on which the decision of the trial court in the Seventh Circuit is based. The Court of Appeals for the Eighth Circuit was quite aware of this District Court decision by Judge Hoffman but noted that its decision must be, as it was, decided on the record before it.

Reasons for granting a writ of certiorari are specifically enumerated in Rule 19(1)(b) of this Court. It is of course to be understood that the reasons as therein stated are neither controlling nor fully measure the Court's discretion in this regard. Among those reasons that are set forth for granting review by certiorari is the case where a Court of Appeals has rendered a decision in conflict with the decision of another Court of Appeals on the same matter. We note that no such reason is stated for granting the writ on the basis of a conflict of decision between a Court of Appeals

on the one hand and a trial court decision on the other. Nor can we find any instance in which a writ of certiorari was in fact granted by this Court on the latter basis.

With respect to certiorari in patent infringement cases specifically, perhaps the language found in American Jurisprudence states it best. We find in 32 Am. Jur. 2d at 699:

> "Certiorari in patent infringement cases will be granted where validity and infringement are in doubt and further litigation resulting in conflict of decision among circuits is improbable because the petitioner is the only competitor in the business, but where there is no conflict between decisions of Courts of Appeal on the question whether a patent is invalid for anticipation or lack of invention, the writ will not be granted."
>
> (Citing: *General Talking Pictures Corp.* v. *Western Electric Co.*, 304 U. S. 175; *Keller* v. *Adams-Campbell Co.*, 264 U. S. 314.)

With reference to the foregoing passage we note that we do not have a case where the Petitioner is the only competitor in the business. Nor do we have a case where further litigation resulting in conflict of decision among circuits is improbable. Petitioner itself states that there are instances of alleged infringement in circuits other than the Seventh or Eighth in which the validity of the Isbell patent may be litigated. There is, of course, no conflict of decisions between Courts of Appeal. Accordingly, we submit there exists no proper foundation for this Court to grant a review by certiorari in the present case.

THE STANDARD OF PATENTABILITY APPLIED BY THE COURT OF APPEALS FOR THE EIGHTH CIRCUIT WAS PROPER.

Petitioner argues that the decision of the Court of Appeals in this case

> "... effectively denies the patentability of all combinations of known elements." (PB 12.)

The Court doubtless will be surprised to learn that they have "effectively" passed new legislation affecting patents. We have assumed the decision of the Court did not extend beyond a determination that the Isbell antenna did not involve nonobvious subject matter. There is no statement in the decision of the Court of Appeals which will support the argumentative conclusion stated by Petitioner.

Petitioner proceeds to note that:

> "The standard of obviousness cannot be as broad as that adopted by the Court of Appeals. * * * If the mere fact that known elements are intentionally combined renders a combination unpatentable, even though the result is unpredictable and the combination is made without a reasonable prospect for success, then only accidental discoveries will be patentable, * * *." (PB 12-13.)

A standard of patentability expressed in the terms of Petitioner's argument would necessarily contemplate the existence of patentable subject matter if:

(1) the result is unpredictable;
(2) the development is made without a reasonable prospect for success.

Even though this is a new proposal for a standard of patentability we can explore the result of application of the standard. Since the Court of Appeals, in quoting from the Jasik handbook, observed that "it is not possible to determine *a priori* the frequency independent type of log-periodic antennas" then all one need do to develop an antenna for which a patent must issue would be to experiment with any design not previously developed in that *exact* form. If it worked a patent would issue—the antenna need only be (1) new and (2) useful. Inquiry into the scope and content of the prior art would not be permitted with this standard of patentability.

CONCLUSION.

We respectfully submit that Petitioner has not shown sufficient cause for granting the petition for a writ of certiorari.

Respectfully submitted,

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APPENDIX.

IN THE UNITED STATES COURT OF APPEALS

For the Eighth Circuit

No. 19000 Civil

UNIVERSITY OF ILLINOIS FOUNDATION,

Appellant,

vs.

WINEGARD COMPANY,

Appellee.

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF IOWA, DAVENPORT DIVISION.

APPELLANT'S PETITION FOR REHEARING IN BANC.

INTRODUCTION.

Now comes University of Illinois Foundation, plaintiff-appellant, and respectfully petitions for rehearing in banc af the Court's decision of September 30, 1968, which affirmed the District Court's ruling that the invention covered by the Isbell patent in suit was obvious in view of the prior art and that the patent is therefore invalid.

This petition is based on the following points:

1. The standard of obviousness applied by the Court is improper and will result in the complete destruction of our entire patent system. If the mere fact that known elements are intentionally combined renders the combination unpatentable, even though the result is unpredictable and the combination is made without a reasonable prospect for success, then only accidental discoveries will be patentable, because there are no new elemnts which can be combined.

2. The Court's allegation that appellant did not claim the patented invention to "embrace elements having an interdependent functional relationship" is erroneous. The decision of the Supreme Court in *United States* v. *Adams,* 383 U. S. 39 (1966), is fully applicable to this case.

Argument.

I. The court applied the wrong standard to the issue of obviousness.

The log-periodic dipole antenna array covered by the Isbell patent in suit is admittedly a combination of old elements. In its decision, the Court conceded the following:

1. There was no reference teaching the design of log-periodic antennas.

2. The individual elements of the Isbell antenna array could be connected in countless combinations and variations involving the selection of these elements, the manner in which these elements are combined, and the size and spacing of these elements.

3. No one could predict which, if any, of these countless combinations would give the results obtained by Isbell.

Unpredictability of Result Cannot Be Ignored in Determining Nonobviousness.

The Court dismisses the unpredictability of Isbell's invention as merely tending "to obscure the true issue of 'nonobviousness'." Granting that the statutory standard is "nonobviousness," appellant nevertheless submits that predictability is a major factor to be considered in resolving the issue. As the C. C. P. A. said in *Application of Pantzer*, 341 F. 2d 121, 126 (1965):

> "In other words, an invention can be said to be obvious if one ordinarily skilled in the art would consider that it was logical to anticipate with a high degree of probability that a trial of it would be successful."

In this case, not only was there no "high degree of probability" of success, exactly the opposite was true. One skilled in the art who might have contemplated making Isbell's combination would have anticipated failure with a high degree of probability.

The "obvious-to-try" test applied by this Court is not sufficiently discriminatory. This is a most unrealistic approach to the results of research, which is contrary to statute (35 U. S. C. 103), which provides that "Patentability shall not be negatived by the manner in which the invention is made.", and one which has been criticized by the courts. In *Application of Tomlinson*, 363 F. 2d 928, 931 (1966), the C. C. P. A. repected the argument that the invention involved only "routine experimentation", saying:

> "Our reply to this view is simply that it begs the question, which is obviousness under section 103 of *compositions* and *methods*, not of the direction to be taken in making *efforts* or *attempts*. Slight reflection suggests, we think, that there is usually an element of 'obviousness to try' in any research endeavor, that it

> is not undertaken with complete blindness but rather with some semblance of a chance of success, and that patentability determiations based on that as the test would not only be contrary to statute but result in a marked deterioration of the entire patent system as an incentive to invest in those efforts and attempts which go by the name of 'research'." (Emphasis in original.)

In the present case, there was no indication that Isbell's combination of elements was any more worthy of research than any other of the countless combinations which could have been made. Further, not only does the record show that others at the University of Illinois tried and failed to achieve the Isbell type of antenna (R. 103, 104), it also shows that there was a serious need for such an antenna which others had failed to satisfy (R. 123-125). The fact that this need existed and that others had not even pursued the idea of a log-periodic dipole array, is an additional indication that such a pursuit was not obvious.

Without the so-called "log-periodic theory of antenna design", which this Court found the lower court erroneously assumed to exist, an antenna designer, at the time the invention of Isbell was made, would have been faced with the problem of selecting blindly or by trial and error, the single effective combination of elements made by Isbell from the vast number of such combinations which could be made and which would not work. Further, the log-periodic theory is by no means the only approach to antenna design. There were many other basic approaches from which the designer had to make a selection. The Court of Appeals for the Second Circuit held in *Frank W. Egan & Co.* v. *Modern Plastic Machinery Corp.*, 387 F. 2d 319, 323 (1967):

> "As Judge Learned Hand phrased it in *B. G. Corp.* v. *Walter Kiddie & Co.*, 79 F. 2d 20, 26 USPQ (2 Cir. 1935): 'All machines are made up of the same elements * * * But the elements are capable of an infinity of permutations, and the selection of that group which proves

serviceable to a given need may require a high degree of originality. It is that act of selection which is the invention' . . ."

One Skilled in the Art Would Have Been Deterred From Making Isbell's Combination.

In its decision, this Court distinguished the decision of the Supreme Court in *United States* v. *Adams,* 383 U. S. 39 (1966), on the ground that there was no deterrent which faced those in the art who sought to achieve Isbell's result. It is respectfully submitted that the Court erred.

Rather than having a reasonable prospect for success in designing a log-periodic antenna, one skilled in the art would have expected failure and thus would have been deterred from even making the attempt. The knowledge that only a few successful log-periodic antennas were found among the many log-periodic structures which had been designed and tested is, in effect, a teaching away from such structures for one seeking to design a frequency independent antenna. What is obvious to one skilled in the art depends, of course, on the knowledge possessed by those skilled in the art at the time the invention is made. This knowledge would hardly suggest that a log-periodic structure employing simple dipoles would obviously function in a frequency independent manner.

II. THE ISBELL INVENTION INVOLVES ELEMENTS HAVING AN INTERDEPENDENT FUNCTIONAL RELATIONSHIP.

The Court erred when it stated in its opinion that no claim was made that Isbell's combination involved an "interdependent functional relationship" ofelements. Such a claim was made on pages 17 and 20 of appellant's Brief and on pages 6 and 7 of appellant's Reply Brief. Moreover, the decision of the Court, page 7, footnote 5, shows, in the words

of defendant's president, the interaction which always exists when several elements of an antenna are placed together.

CONCLUSION.

It is submitted that the present case presents an exact parallel with the facts which faced the Supreme Court in the *Adams* case. Here, as in *Adams,* a combination of elements was made, in spite of the knowledge and predictions of the prior art that indicated failure, to achieve an unpredictable result involving the interdependent functional relationship of the several elements. The decision of the Supreme Court in the *Adams case* is therefore fully applicable in the instant situation.

For the foregoing reasons appellee requests an opportunity for a rehearing on these points. Because of the fundamental nature of the question presented, it is requested that the rehearing be before the entire Court, sitting in banc.

Respectfully submitted,

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EXCERPTS FROM RECORD.

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slot antenna you also have some information about the sheet metal antenna.

Q. I believe you testified that the inventor of this antenna which you have just described was Prof. DuHamel, who was at the University at that time?

A. Yes.

Q. And what year was that?

A. Approximately 1957.

(Tr. 163) Q. Incidentally, who assigned the name log-periodic to antennas of this type?

A. Prof. DuHamel.

Q. Can you describe briefly any subsequent log-periodic antennas that came after this, the one you have just described?

A. Yes, the next most significant development in the log-periodic antenna field was the achievement of a unidirectional rediation pattern, whereby the radiation on one side of the antenna was suppressed and the directional beam was produced on the other side of the antenna. This performance was achieved by Dwight Isbell in his work at the University of Illinois Antenna Laboratory and he achieved this type of performance by spoiling the symmetry of the original log-periodic antenna. This was obtained by bending the elements out of the plane in a manner which reduced the radiation in one direction to negligible values.

Q. Did the effort to develop log-periodic antennas continue unabated at least until 1960?

A. Yes.

Q. How many successful log-periodic antennas were developed during that period?

A. Three or four.

Q. How many attempts were made to develop log-periodic antennas?

A. Many.

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(Tr. 164) Q. Could you give us an estimate of what you mean by many?

A. I would say many models were constructed using the concept of the repeating cells. However, only a few of these gave the desired frequency independence performance. As far as an exact number of many, I would say they would run in the 10s.

Q. 20, for example?

A. 20, 30.

Q. What was the difficulty in designing operable log-periodic antennas?

A. There are two principal difficulties. One of these has been referred to as the end effect. Once again, Your Honor, I think the blackboard would be of use in describing what we mean by end effect. Suppose I refer to this particular structure which is, as we have said, a successful frequency independent variety of log-periodic structure, and let's consider it, for reasons of simplicity in the discussion, as a transmitting antenna, although we have heard Mr. Harris testify as an expert that the important electrical properties of an antenna are not really dependent upon whether the antenna is being used as a transmitting

antenna or as a receiving antenna. In other words, the directional characteristic is evidenced in the radiation pattern, the input impedance of the structure, the polarization, or field which is produced, and (Tr. 165) these properties are all the same for a transmitting antenna or a receiving antenna. However, it is easier to understand the operation of transmitting antennas in general than it is to understand the operation of receiving antennas.

Considering this, therefore, as a transmitting antenna, we would have a source of radio frequency energy, shown schematically here by a circle with a half sine wave described therein. This source of radio frequency energy of a particular frequency within the operating band of the